

The background image is a composite. The lower half shows a dense cityscape with numerous skyscrapers, many of which are covered in lush green vegetation, suggesting a 'vertical forest' concept. The upper half shows a bright sky with several birds in flight. The entire scene is framed by green foliage in the corners, giving it a natural, organic feel.

t?f

The Why Factory

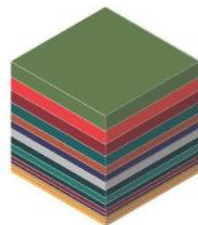
The Green Dip

Covering the city with a forest

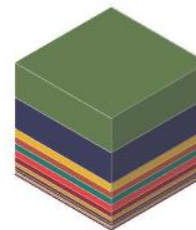
The Biomes

□ Biomes

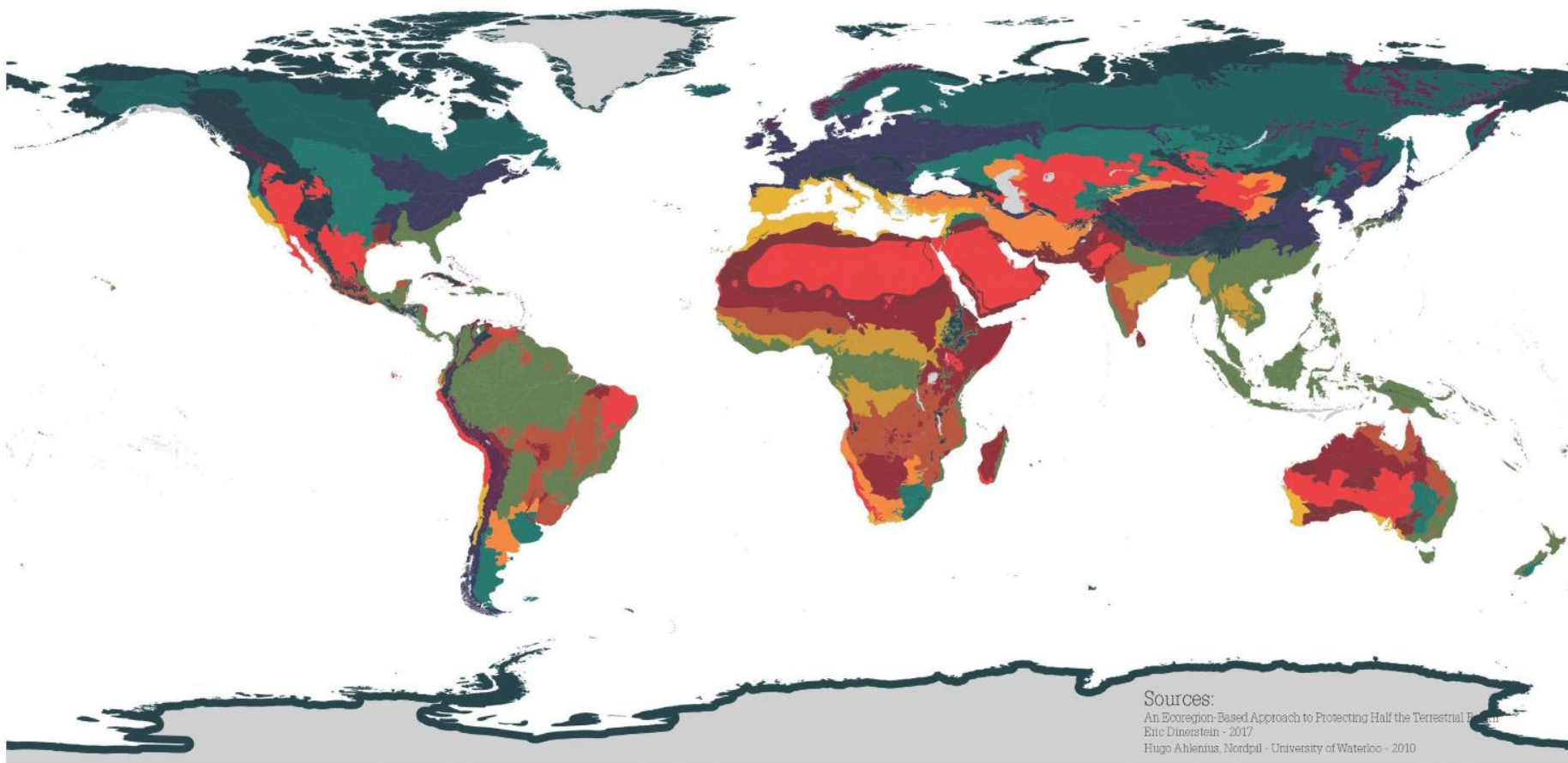
The World in Biomes



Percentage of world
land coverage by
each biome



Percentage of
population in urban
agglomerations



Sources:
An Ecoregion-Based Approach to Protecting Half the Terrestrial Biome
Eric Dinerstein - 2017
Hugo Ahlennus, Nordpil - University of Waterloo - 2010

The Catalogue

CO₂ absorption (kg/year)



26,487

Adansonia digitata
Savanna



6,622

Abies grandis
Montane forest



6,622

Pseudotsuga menziesii
Montane forest



1,862

Populus alba
Tundra



1,862

Fagus sylvatica
Temperate broadleaf



1,589

Pinus ponderosa
Montane forest



797

Bambusa ventricosa
Monsoon forest



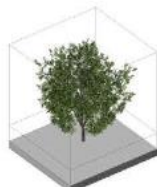
552

Acacia tortilis
Savanna



530

Platanus orientalis L.
Taiga



447

Celtis australis
Subtropical rainforest



298

Phoenix dactylifera
Arid desert



276

Robinia pseudoacacia
Semiarid desert



276

Acacia caven
Subtropical dry forest



207

Acer saccharinum
Tundra



199

Chamaecyparis
Taiga



199

Quercus ilex
Mediterranean vegetation



172

Gleditsia triacanthos
Semi arid desert



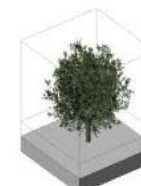
159

Olneya tesota
Subtropical dry forest



110

Pterocarpus angolensis
Monsoon forest



69

Brachychiton populneum
Semi arid desert



55

Ziziphus jujuba
Dry steppe



41

Acacia retinoides
Monsoon forest



41

Corylus avellana
Mediterranean vegetation



40

Tamarix austro-africana
Dry steppe



29

Betula utilis
Alpine tundra



14

Pinus mugo Mughus
Alpine tundra



11

Kalancho beharensis
Arid desert



9

Buxus sempervirens
Subtropical rainforest

O₂ production (kg/year)



12521

Adansonia digitata
Savanna



3130

Abies grandis
Montane forest



3130

Pseudotsuga menziesii
Montane forest



880

Populus alba
Tundra



880

Fagus sylvatica
Temperate broadleaf



751

Pinus ponderosa
Montane forest



377

Bambusa ventricosa
Monsoon forest



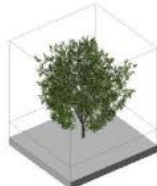
261

Acacia tortilis
Savanna



250

Platanus orientalis L.
Taiga



211

Celtis australis
Subtropical rainforest



130

Robinia pseudoacacia
Semiarid desert



130

Acacia caven
Subtropical dry forest



98

Acer saccharinum
Tundra



94

Chamaecyparis
Taiga



94

Quercus ilex
Mediterranean vegetation



81

Gleditsia triacanthos
Semi arid desert



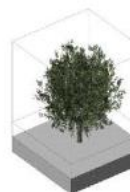
75

Olneya tesota
Subtropical dry forest



52

Pterocarpus angolensis
Monsoon forest



33

Brachychiton populneum
Semi arid desert



26

Ziziphus jujuba
Dry steppe



20

Acacia retinoides
Monsoon forest



19

Corylus avellana
Mediterranean vegetation



19

Tamarix austro-africana
Dry steppe



14

Betula utilis
Alpine tundra



13

Kalanchoe beharensis
Arid desert



6

Pinus mugo Mughus
Alpine tundra



4

Buxus sempervirens
Subtropical rainforest



4

Agave salmiana var. *ferox*
Xeric shrubland

Soil water retention (m³ of water per m³ of soil)



1

Pinus ponderosa
Montane forest



0.72

Acacia tortilis
Savanna



0.68

Acer saccharinum
Tundra



0.48

Platanus orientalis L.
Taiga



0.48

Chamaecyparis
Taiga



0.48

Phoenix dactylifera
Arid desert



0.48

Olneya tesota
Subtropical dry forest



0.48

Pseudotsuga menziesii
Montane forest



0.45

Escallonia alpina
Alpine tundra



0.43

Buxus sempervirens
Subtropical rainforest



0.36

Abies grandis
Montane forest



0.24

Populus alba
Tundra



0.23

Symphoricarpos albus
Montane forest



0.22

Panicum virgatum
Subtropical rainforest



0.22

Corylus avellana
Mediterranean



0.22

Pterocarpus angolensis
Monsoon forest



0.16

Parthenocissus
Taiga



0.14

Bambusa ventricosa
Monsoon forest



0.14

Tamarix austro-africana
Dry steppe



0.13

Adansonia digitata
Savanna



0.12

Fagus sylvatica
Temperate broadleaf



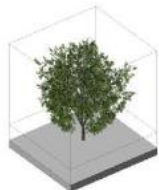
0.11

Agave salmiana var.
Xerix shrubland



0.10

Brachychiton populneum
Semiarid desert



0.8

Celtis australis
Subtropical rainforest



0.8

Dichrostachys cinerea
Savanna



0.7

Miscanthus sinensis
Temperate steppe



0.7

Betula utilis
Alpine tundra



0.7

Acer ginnala
Temperate broadleaf

Energy saving from cooling (kWh/year)



2,422

Platanus orientalis L.
Taiga



2,325

Pseudotsuga menziesii
Montane forest



1,939

Abies grandis
Montane forest



1,327

Celtis australis
Subtropical rainforest



1,002

Pinus ponderosa
Montane forest



734

Chamaecyparis
Taiga



714

Fagus sylvatica
Temperate broadleaf



649

Phoenix dactylifera
Arid desert



606

Acacia caven
Subtropical dry forest



455

Quercus ilex
Mediterranean vegetation



411

Adansonia digitata
Savanna



401

Gleditsia triacanthos
Semi arid desert



323

Pterocarpus angolensis
Monsoon forest



266

Hedera helix
Subtropical rainforest



261

Acacia tortilis
Savanna



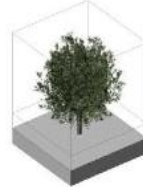
231

Acer saccharinum
Tundra



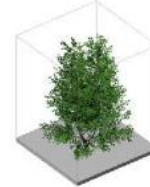
222

Dichrostachys cinerea
Savanna



158

Brachychiton populneum
Semi arid desert



152

Senecio macroglossus
Monsoon forest



114

Parthenocissus
Taiga



111

Populus alba
Tundra



106

Chamaecereus silvestrii
Subtropical dry forest



90

Ziziphus jujuba
Dry steppe



64

Buxus sempervirens
Subtropical rainforest



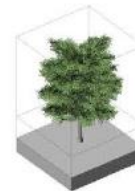
63

Robinia pseudoacacia
Semiarid desert



48

Betula utilis
Alpine tundra



45

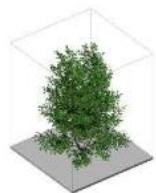
Acacia retinoides
Monsoon forest



44

Kalancho beharensis
Arid desert

Energy saving from insulation (kWh/m²)



0.89

Kalanchoe beharensis
Arid desert



0.46

Alchemilla alpina
Alpine tundra



0.43

Opuntia spinulifera
Dry steppe



0.43

Hedera helix
Subtropical rainforest



0.42

Senecio macroglossus
Monsoon forest



0.34

Stipa gigantea
Semi arid desert



0.28

Chamaecereus silvestrii
Subtropical dry forest



0.26

Daphne mezereum
Tundra



0.25

Nassella tenuissima
Temperate steppe



0.25

Molinia caerulea
Temperate steppe



0.25

Hystrix Patula
Temperate steppe



0.24

Deschampsia cespitosa
Mediterranean vegetation



0.24

Ziziphus jujuba
Dry steppe



0.24

Phragmites australis
Dry steppe



0.24

Chondropetalum tectorum
Savanna



0.24

Agave americana
Subtropical dry forest



0.19

Sagina subulata
Temperate broadleaf



0.19

Acacia retinoides
Monsoon forest



0.19

Anemathele lessoniana
Taiga



0.19

Robinia pseudoacacia
Semiarid desert



0.19

Gleditsia triacanthos
Semiarid desert



0.17

Parthenocissus
Taiga



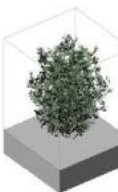
0.16

Cotoneaster horizontalis
Tundra



0.16

Pinus mugo Mughus
Alpine tundra



0.15

Elaeagnus x ebbingei
Xeric shrubland



0.15

Quercus ilex
Mediterranean vegetation



0.15

Cistus albidus
Mediterranean vegetation



0.15

Dichrostachys cinerea
Savanna

Energy production (kWh)



28,668

Adnansonia digitata
Savanna



7,167

Abies grandis
Montane forest



7,167

Pseudotsuga menziesii
Montane forest



2,016

Populus alba
Tundra



2,016

Fagus sylvatica
Temperate broadleaf



1,720

Pinus ponderosa
Montane forest



863

Bambusa ventricosa
Monsoon forest



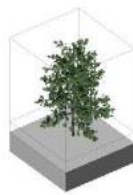
806

Celtis australis
Subtropical rainforest



597

Acacia tortilis
Savanna



573

Platanus orientalis L.
Taiga



323

Phoenix dactylifera
Arid desert



299

Robinia pseudoacacia
Semiarid desert



299

Acacia caven
Subtropical dry forest



224

Acer saccharinum
Tundra



215

Chamaecyparis
Taiga



215

Quercus ilex
Mediterranean vegetation



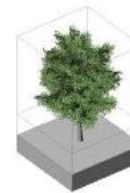
187

Gleditsia triacanthos
Semi arid desert



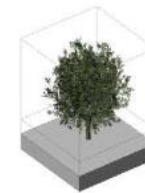
172

Olneya tesota
Subtropical dry forest



119

Pterocarpus angolensis
Monsoon forest



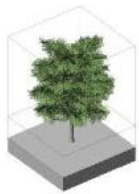
75

Brachychiton populneum
Semi arid desert



60

Ziziphus jujuba
Dry steppe



45

Acacia retinoides
Monsoon forest



44

Corylus avellana
Mediterranean vegetation



43

Tamarix austro-africana
Dry steppe



31

Betula utilis
Alpine tundra



15

Pinus mugo - Mughus
Alpine tundra



12

Kalancho beharensis
Arid desert



10

Buxus sempervirens
Subtropical rainforest

Maintenance cost (EUR/m² · year)



4.35

Pinus mugo Mughus
Alpine tundra



5.80

Agave salmiana var. *ferox*
Xeric shrubland



6.13

Opuntia spinulifera
Dry steppe



6.28

Quercus ilex
Mediterranean vegetation



6.77

Agave americana
Subtropical dry forest



7.09

Phoenix dactylifera
Arid desert



7.73

Ziziphus jujuba
Dry steppe



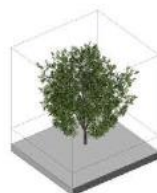
7.84

Miscanthus sinensis
Temperate steppe



8.38

Acer ginnala
Temperate broadleaf



8.54

Celtis australis
Subtropical rainforest



8.70

Pterocarpus angolensis
Monsoon forest



8.86

Tamarix austro-africana
Dry steppe



8.94

Molinia caerulea
Temperate steppe



8.94

Hystrix Patula
Temperate steppe



9.50

Panicum virgatum
Subtropical rainforest



9.50

Deschampsia cespitosa
Mediterranean vegetation



9.63

Stipa gigantea
Semi arid desert



9.77

Olneya tesota
Subtropical dry forest



9.77

Betula utilis
Alpine tundra



9.99

Anemanthele lessoniana
Taiga



10.04

Acacia tortilis
Savanna



9.50

Pinus ponderosa
Montane forest



9.50

Fagus sylvatica
Temperate broadleaf



9.63

Phragmites australis
Dry steppe



9.77

Chondropetalum tectorum
Savanna



9.77

Sagina subulata
Temperate broadleaf



9.99

Pseudotsuga menziesii
Montane forest



10.04

Nassella tenuissima
Temperate steppe

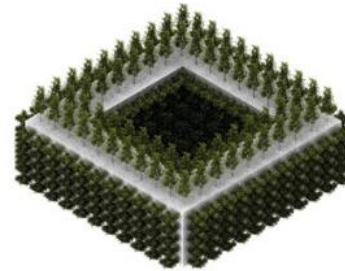
The Urban Forms



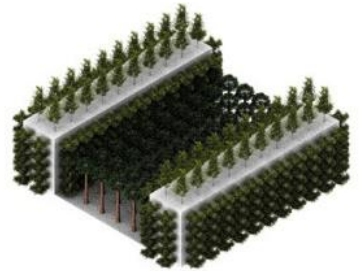
Block



Skyscraper



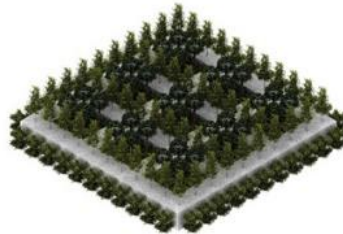
Courtyard



Bars



Slab



Patio



Towers



Villas



Straits



Row Houses



Open Block



x

The Visions





Green Cities

Barcelona







Green Cities

Barcelona





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Green Cities

Kinshasa






 Green Cities

Kinshasa





 Green Cities

Sao Paulo





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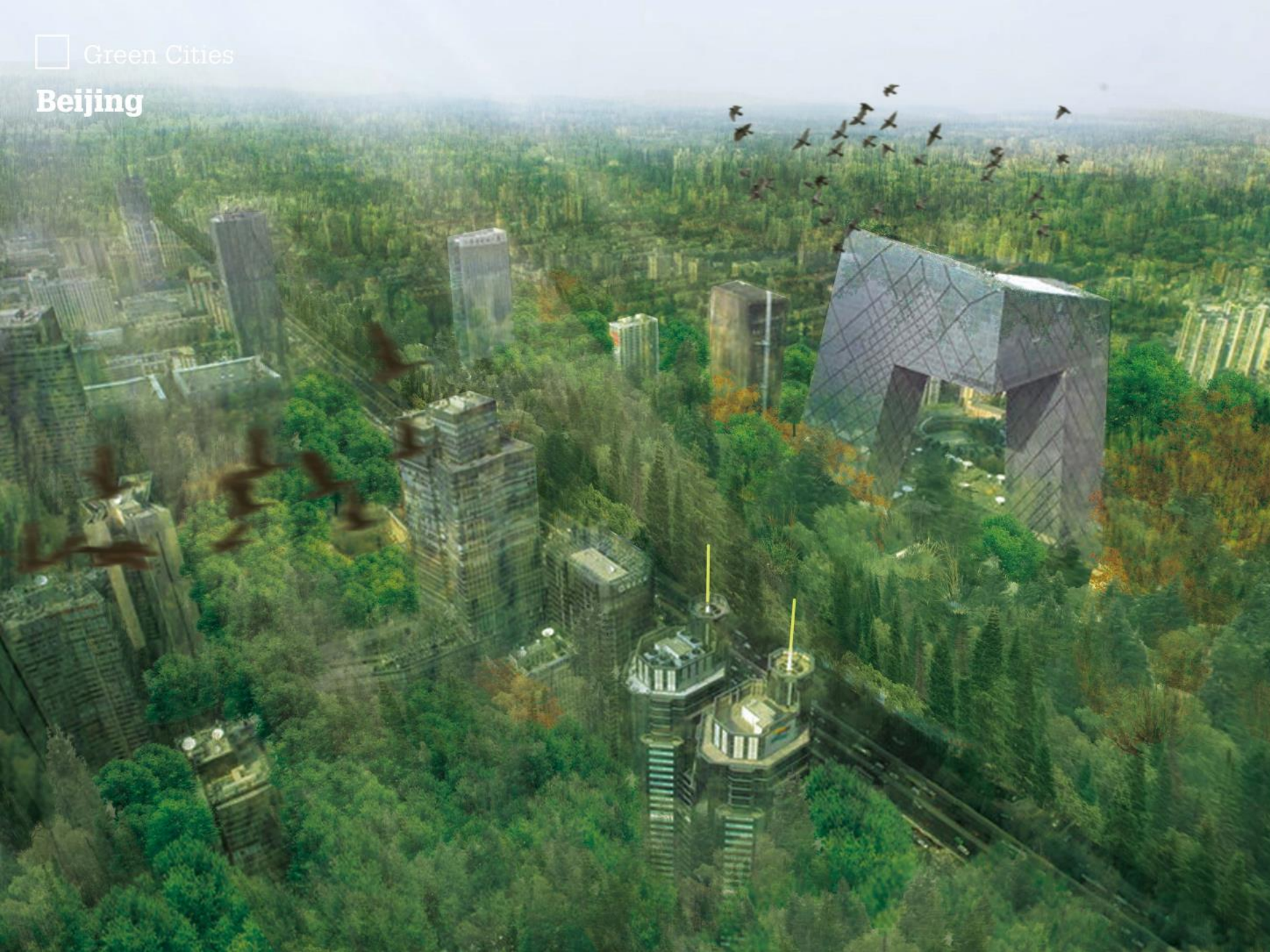
Sao Paulo






 Green Cities

Beijing





 Green Cities

Beijing





☐ Green Cities

Saint Petersburg







Green Cities

Saint Petersburg

